Interim Measures Plan

Poles, Inc.
400 First Street
Oldtown, Idaho

prepared for:

Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706

November 22, 2004

prepared by:

QUANTUM Engineering and Geologic Consulting
South 2641 Silver Beach Loop Coeur d'Alene, Idaho 83814
208 765 2308

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

1. INTERIM MEASURE PLAN GOALS

The goal of this Interim Measures Plan is to provide the information and drawings that will be used to create a repository for pole yard soils, place the soils in the repository and construct a cap and cover for the repository.

2. FACILITY DESCRIPTION

2.1. Introduction

This facility description is pursuant to 40 CFR 270.14. The section provides general information regarding the Poles Inc. (PI) facility located at 400 First Street in Oldtown, Idaho.

Pole manufacturing has been performed at the site since 1945 by Poles, Inc. The process involved receiving, peeling and drying of raw poles, incising and framing the dried peeled poles, preservative treatment of poles in a dip tank, transfer of treated poles to an inspection area and shipping of the treated poles to various customers. Both butt treating and full-length treating were done at the site.

Raw poles, as logs, were typically off-loaded into the yard and stored on log cribs. The raw logs were then sorted, peeled and trimmed. These peeled poles were then stacked for drying on log cribbing in the pole yard in areas called "white wood storage".

Pentachlorophenol (PCP) was the preservative used to impregnate the poles in dip tanks. The PCP preservative was applied to the poles using a petroleum based carrier compound. The petroleum carrier compound was a fuel oil similar to diesel fuel. The constituents of concern (COC) related to the carrier compound are best characterized as poly aromatic hydrocarbons (PAH) compounds.

The PCP was received in large blocks that were double wrapped in plastic. The blocks were placed in the dip tank to dissolve into the carrier fluid (original specific gravity approximately 0.65). The Rural Electrification Administration required that the treating solution be not less than 5% PCP by weight. The resultant PCP solution had a specific gravity of 0.95-0.97.

The fuel oil/PCP solution was circulated through a heat exchanger located at the east end of the dip tank. Steam from the boiler building was piped through the heat exchanger. The heated solution was circulated through the dip tank thereby mixing the PCP into the carrier solution and enhanced penetration. The dip tank was a steel tank set on a concrete pad. The dip tank was approximately 8 feet wide, 96-feet long and 12-feet deep. Poles were placed either vertically or horizontally, depend on the need of the customer.

After treating a batch of poles, the heated solution was pumped from the dip tank and into a solution storage tank. The treated poles remained in the dip tank, and the poles were allowed to drip dry for approximately 2-days prior to removal from the tank and loading on a truck carrier. Stored oil/PCP solution was returned and heated in the dip tank to treat a new batch of poles. Partial loads of butt and full-length treated logs were stored in the yard for small orders. The above process precluded the need for separate drip pads.

Poles, Inc. has ceased operations and the treating facility has been dismantled. The site is now leased to Cedar Poles Limited and is being used as a pole-peeling yard.

3. FACILITY LOCATION INFORMATION

The facility is located in sections 24 and 25 of Township 56 North, Range 6 West. The site is located in the town of Oldtown, Idaho. Oldtown is situated along the Idaho/Washington border and shares a common border with the city of Newport, Washington. The site consists of approximately 19 acres. See Figure 3-1 for location of the facility.

The site is located on a terrace on the south side of the Pend Oreille River. The pole manufacturing operation was located on the relatively flat terrace. The terrace is located approximately 80 vertical-feet above the river. The north-facing slope of the terrace is heavily covered with timber and brush.

The facility is bordered on the south by an active Burlington Northern railroad right-of-way. The rail line serves a log loading operation to the south and east of the PI facility and other industrial activities further east.

The site is bordered on the west by Highway 41, which follows the Idaho/Washington border between Old Town and Newport. The north side of the site is bordered by low-density residential and commercial properties. The site is bordered on the north and east by the Pend Oreille River. Water in the river is influenced by the Albeni Falls dam located a few miles upstream from the site.

3.1. Geologic and Hydrogeologic Setting

The area surrounding the region is dominated by mountainous areas dissected by active streams or former stream channels that have been filled with glacial flood deposits. Several thousand feet of elevation separate the valley floors from the mountainous tops.

The mountains are formed in old Precambrian metamorphic rocks of gneiss, schist, quartzite, amphibolite and migmatite. These rocks have been complexly folded, faulted and metamorphosed. In some areas, the Precambrian metamorphic rocks (pCm, pCn on the geologic map) have been intruded with newer igneous rocks of Tertiary age (Tkpa, Ts). This complex of metamorphic and igneous rocks form the basement of the region and are typical of much of North Idaho and Northeast Washington.

The ancestral mountainous terrain was formerly mature with a well-developed network of streams and rivers that drained to the south and west. In recent Pleistocene time (10,000-20,000 years ago) the area was inundated by catastrophic glacial floods. These floods originated in the Cabinet Gorge area east of Lake Pend Oreille. Numerous floods were released when an ice plug in the Cabinet Gorge eroded or floated free of the canyon floor. Flood water, several hundred feet in depth, carried and deposited enormous quantities of flood deposits (Qag) into the valley areas. The glacial deposits filled the existing mature valley drainage system with several hundred feet of silt, sand and gravel.

In some areas, streams have reestablished themselves through the glacial deposits. The Pend Oreille River and the Priest River are examples of such. The area approximating the route of Highway south of Oldtown is an example a former stream location that has not reestablished itself through the glacial fill.

Groundwater in the mountainous areas occurs in a complex interaction between surface water and fractured flow associated with folding, faulting and other tectonic activities. This combination of surface and groundwater flows into the valleys of glacial fill.

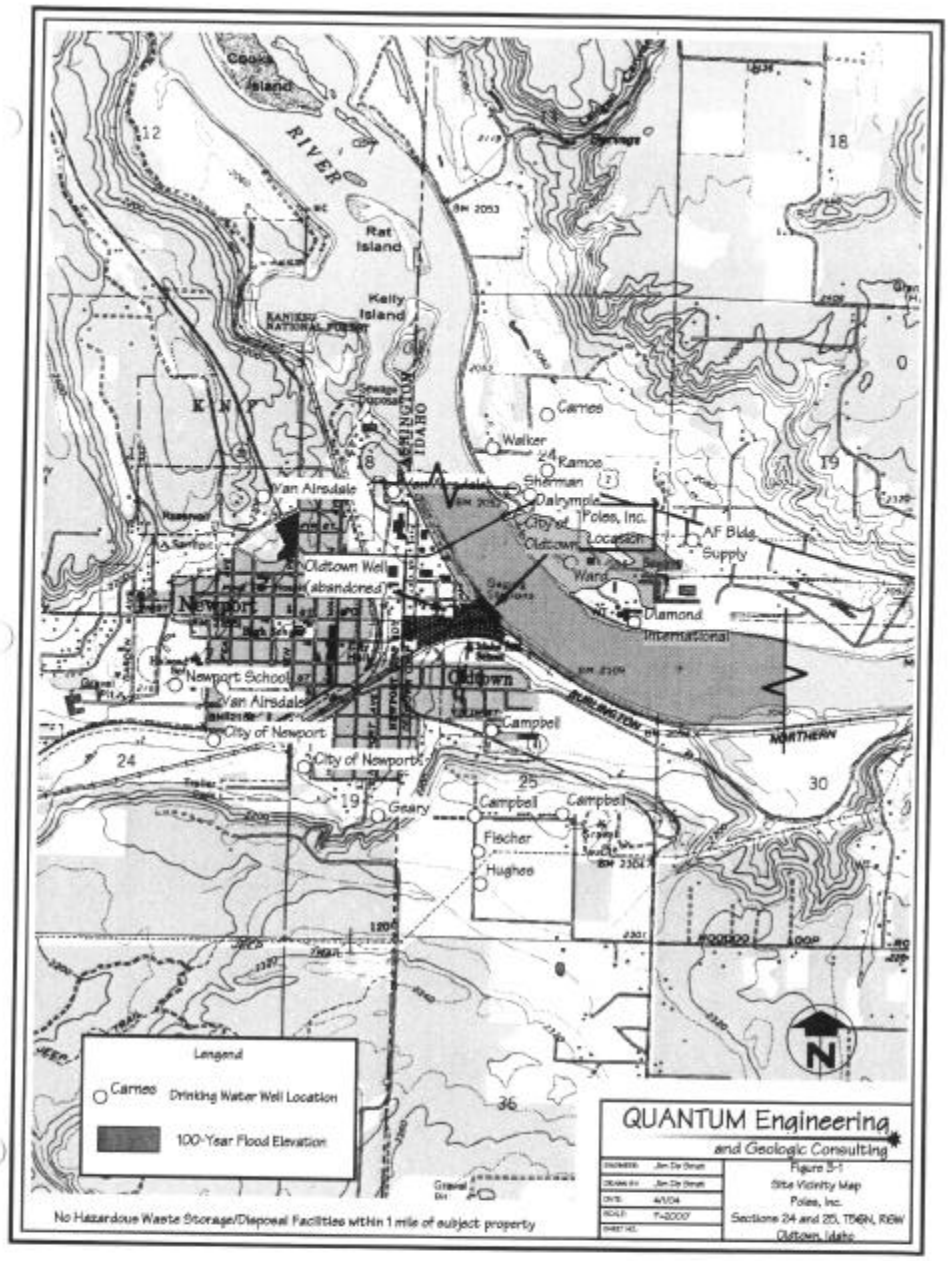
Groundwater in the glacial deposits flows freely as unconfined aquifers through these porous deposits. Recharge to these aquifers is from direct precipitation and from groundwater and surface water discharged from the mountainous uplands. Discharge from these aquifers is to established surface water channels and river systems. In areas adjacent to established surface water systems the water is hydraulically connected and is temporally influenced by the surface water.

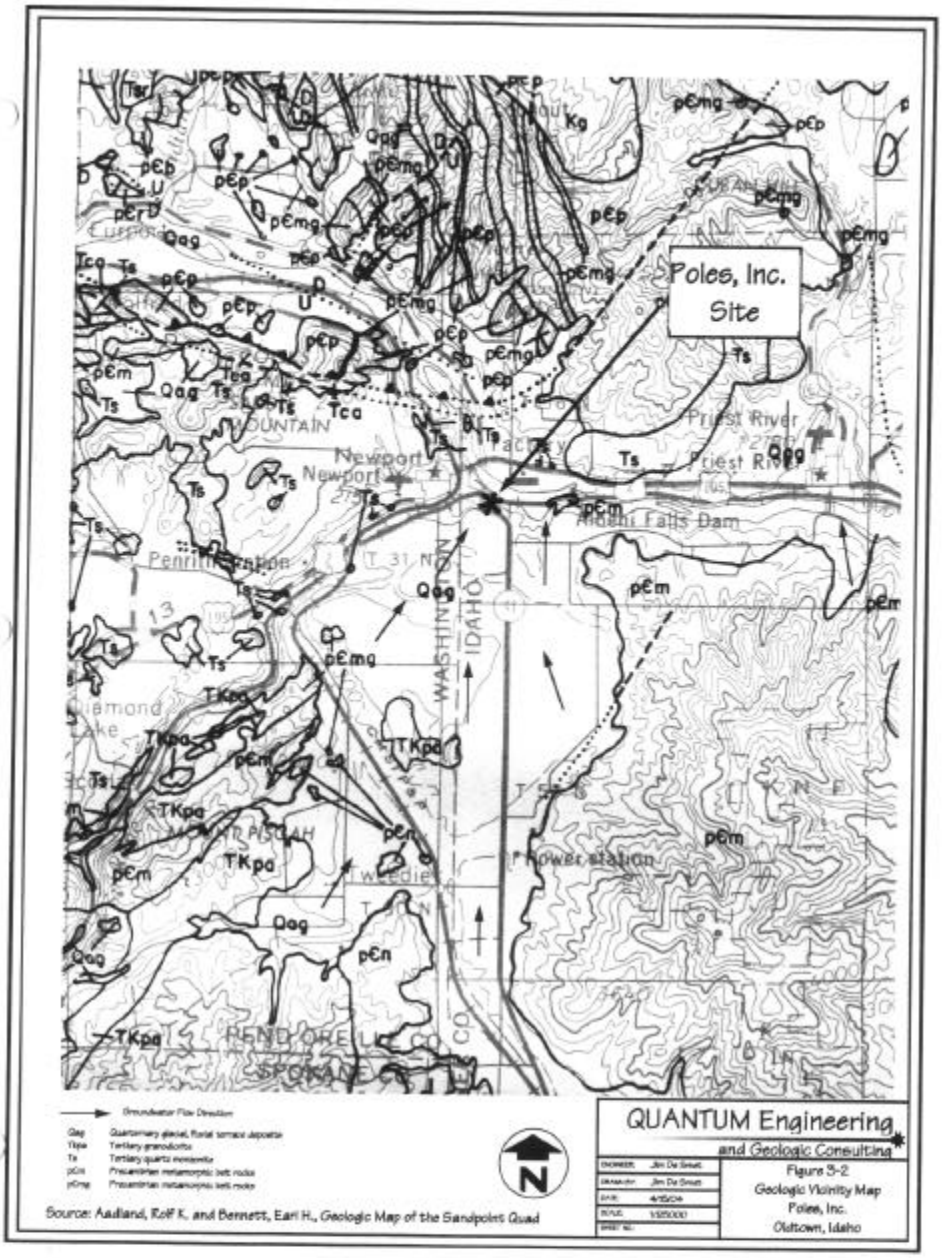
The aquifer materials range from silty sand to coarse gravelly sand. Hydraulic conductivity of the aquifer material is estimated to range from 10^{-2} cm/sec to 10^{-4} cm/sec. Hydraulic pump testing nor slug testing have been performed at this time. The overall depth of the aquifer is not known. All six wells are 80-85 feet deep and none have encountered bedrock. The nearest well is the abandoned City of Oldtown with a total depth of approximately 135 feet in glacial/alluvial formations.

Quarterly monitoring of monitoring wells have revealed approximately 9 feet of seasonal variation. The variation is likely due to the seasonal variation in the Pend Oreille River level.

The site is not located within the 100-year flood plain according to the Flood Insurance Map prepared by the Federal Emergency Management Agency (FEMA) Community Panel Number 1602060355 D. According to the FEMA map the 100-year flood elevation is 2056 ft. msl. The 100-year flood contour is 319 feet from the nearest point of the waste management unit. This elevation contour is identified on Figure 3-3.

The 100-year flood elevation is more than 54-feet below the waste management unit and is not capable of impacting the unit. There are no surface watercourses or storm water paths that will impact the unit.


Cooks Island
RIVER
Rat Island
Kelly Island
KANIKSU NATIONAL FOREST
IDAHO
Carnes
Walker
Ramos
Sherman
Dalrymple
Poles, Inc. Location
AF Bldg Supply
Van Airsdale
Oldtown Well (abandoned)
Ward
Diamond International
Newport
Oldtown
Newport School
Van Airsdale
City of Newport
Campbell
BURLINGTON
NORTHERN
City of Newport
Geary
Campbell
Campbell
Fischer
Hughes
Legend
Carnes Drinking Water Well Location
100-Year Flood Elevation
No Hazardous Waste Storage/Disposal Facilities within 1 mile of subject property
QUANTUM Engineering
and Geologic Consulting
Figure 5-1
Site Vicinity Map
Poles, Inc.
Sections 24 and 25, T56N, R6W
Oldtown, Idaho


Poles, Inc.
Site
Newport
Priest River
Priest River
Albeni Falls Dam
Power station
Penrith
Diamond Lake
MOUNTAIN
WASHINGTON
IDAHO
PEND OREILLE CO
SPOKANE CO
Tsr
Qag
Tcg
Ts
Tca
Tp
Kg
pEp
pEmg
pEm
pEn
pEb
pEr
TKpg
TKpa
Groundwater Flow Direction
Quaternary glacial, fluvial terrace deposits
Tertiary granodiorite
Tertiary quartz monzonite
Proterozoic metamorphic belt rocks
Proterozoic metamorphic belt rocks
N
QUANTUM Engineering
and Geologic Consulting
Figure 3-2
Geologic Vicinity Map
Poles, Inc.
Oldtown, Idaho
Source: Aadland, Rolf K. and Bennett, Earl H., Geologic Map of the Sandpoint Quad

Locally, groundwater flows from south to north approximately parallel to Highway 41. The aquifer discharges into the Pend Oreille River on the north edge of the property. Static water measurements taken at numerous times of the year at the site indicate only one temporal reversal of flow. This temporal reversal was noted when discharge from the Albeni Falls dam was rapidly increased or a short time period. See Figure 3-2 for a geologic vicinity map of the area and groundwater flow vectors.

Groundwater beneath the site varies from approximately 71-79 feet of depth, depending on season and stage of the river. Gradient across the site ranges from 0.0018 to 0.0033, with an average gradient of 0.0020. Site-specific groundwater contours are shown on Figure 5-1.

4. SITE CHARACTERIZATION DATA

A soil and air assessment conducted by the Environmental Protection Agency (EPA) Superfund Technical Assessment and Response Team-Two (START-2) identified soil contamination at the facility. The assessment identified soil contamination around the treatment facility as well as other spot locations in the pole yard. The findings of this assessment entitled, *Poles Incorporated Site Integrated Assessment Report, TDD 01-07-0007*, was completed January 2002.

Based on the above assessment the Idaho Department of Environmental Quality (DEQ) requested that a limited site characterization be performed to gather additional information. PI entered into a consent order to prepare a Limited Site Investigation Work Plan to collected additional site information and to prepare a Final Site Investigation Report.

Quantum Engineering (QE) prepared a Limited Site Investigation Work Plan on October 16, 2002. QE conducted additional characterization of soil and groundwater and prepared a *Final Site Investigation Report* on May 7, 2003 and an *Addendum to the Final Site Investigation Report* dated October 21, 2003. The two latter documents were accepted and approved by DEQ on November 5, 2003.

4.1. Soil Characterization

Soil contamination for PAH and PCP in excess of the EPA Region IX Preliminary Remediation Goals (PRG) were identified during the EPA and the QE site assessments. Minor surface soil contamination was identified in the pole yard. This contamination was associated with limited treated pole storage and handling. This contamination will be excavated and removed in manner described in the Closure Plan section of this report.

Significant soil contamination was identified under the bottom of the dip tank. This contamination was found to be present from a prior leak in the bottom of the dip tank. This soil contamination was significant and is likely to have migrated to the water table. This contamination is impossible to excavate and remove and will be closed in place as described later in the Closure Plan section of this report.

Soil contamination in excess of the Region IX PRGs was also identified in the area immediately around the dip tank and the chemical storage area. This contaminated soil will be covered with contaminated pole yard from the yard and the entire area will be capped and covered as part of the Closure Plan.

A summary of surface soil data and deeper soil data collected for the site are shown in Table 4-1 and 4-2.

Table 4-1 Surface Soil Data Summary

Sample ID Number	Sample Date	Sample Collector	Sample Type (grab/comp)	Pentachlorophenol mg/Kg Soil	Acenaphthene mg/Kg Soil	Anthracene mg/Kg Soil	Benzo(a)pyrene mg/Kg Soil	Benzo(b)fluoranthene mg/Kg Soil	Benzo(k)fluoranthene (mg/Kg Soil)	Benzo(a)anthracene (mg/Kg Soil)	Benzo(ghi)perylene (mg/Kg Soil)	Chrysene (mg/Kg Soil)	Fluorene (mg/Kg Soil)	Fluoranthene (mg/Kg Soil)	Naphthalene (mg/Kg Soil)	Phenanthrene (mg/Kg Soil)	Pyrene (mg/Kg Soil)	1,3,7,9-TCDD/TEF (ng/Kg Soil)
RT-1120	5/21/91	IDEQ	Comp	15,290	ND	ND	ND	*	ND	ND	0.750	0.185	ND	0.781	ND	3.230	5.303	
RS-170	5/21/91	IDEQ	Comp	734,000	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
RT-220	5/21/91	IDEQ	Comp	2,680	ND	0.945	0.413	*	0.791	0.749	0.570	0.575	ND	0.071	ND	0.690	0.113	
RS-220	5/21/91	IDEQ	Comp	ND	ND	ND	ND	*	ND	ND	1.260	1.140	ND	ND	1.250	1.320	0.823	
RW-170	5/21/91	IDEQ	Comp	ND	ND	ND	ND	*	ND	0.773	ND	0.880	ND	ND	ND	0.195	0.733	
RS-320	5/21/91	IDEQ	Comp	ND	ND	ND	ND	*	ND	ND	ND	0.150	ND	0.239	ND	ND	0.392	
RW-370	5/21/91	IDEQ	Comp	ND	ND	ND	ND	*	ND	0.218	ND	0.150	ND	0.219	ND	ND	0.392	
RT-School	5/21/91	IDEQ	Grab	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
RB-270 Grab	5/21/91	IDEQ	Grab	1,180	ND	ND	ND	*	ND	ND	ND	ND	ND	0.565	ND	0.595	0.215	
RB-Ref-B Grab	5/21/91	IDEQ	Grab	ND	ND	ND	ND	*	ND	ND	ND	0.189	ND	0.079	ND	0.090	0.096	
RS-10 School Grab	5/21/91	IDEQ	Grab	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PP01SS	8/20/91	EPA	Grab	8,200	*	ND	0.243	*	ND	ND	*	0.0858	ND	0.129	0.054	0.170	0.130	
PP02SS	8/20/91	EPA	Grab	48,000	*	0.363	0.308	*	0.056	0.074	*	0.170	0.057	0.190	0.128	0.300	0.640	
PP03SS	8/20/91	EPA	Grab	390,000	*	ND	ND	*	ND	ND	*	ND	ND	ND	ND	ND	ND	
PP04SS	8/20/91	EPA	Grab	ND	*	ND	ND	*	ND	ND	*	ND	ND	ND	ND	ND	ND	
PP05SS	8/20/91	EPA	Grab	54,000	*	ND	ND	*	ND	ND	*	ND	ND	ND	ND	0.480	ND	
PP06SS	8/20/91	EPA	Grab	106,000	*	ND	ND	*	ND	ND	*	ND	ND	ND	ND	1.150	ND	
TP05SS	8/20/91	EPA	Grab	270,000	*	*	*	*	*	*	*	*	*	*	*	*	*	
TP06SS	8/20/91	EPA	Grab	ND	*	*	*	*	*	*	*	*	*	*	*	*	*	
TP07SS	8/20/91	EPA	Grab	106,000	*	*	*	*	*	*	*	*	*	*	*	*	*	
TP08SS	8/20/91	EPA	Grab	30,000	*	*	*	*	*	*	*	*	*	*	*	*	*	
SC-1	10/22/92	QE	Comp	21,300	0.021	0.138	0.154	0.235	0.214	0.198	0.086	0.761	0.012	0.532	0.017	0.152	0.751	
SC-2	10/22/92	QE	Comp	4,630	ND	0.014	0.052	0.021	0.015	0.014	0.017	0.055	ND	0.065	0.028	0.106	0.098	
SC-3	10/22/92	QE	Comp	332,000	ND	0.052	ND	0.056	ND	ND	0.045	0.132	ND	0.129	ND	0.084	0.396	
SC-4	10/22/92	QE	Comp	3,080	ND	ND	0.012	0.007	0.013	ND	0.021	0.032	ND	0.034	ND	0.060	0.032	
SC-5	10/22/92	QE	Comp	12,900	0.018	0.065	ND	0.058	ND	0.016	0.011	0.059	ND	0.034	ND	0.184	0.052	
SC-6	10/22/92	QE	Comp	140,000	0.132	0.239	ND	0.046	0.028	0.141	0.026	ND	0.026	0.212	0.016	0.326	0.112	
SC-7	10/22/92	QE	Comp	17,100	ND	0.015	ND	0.017	0.013	ND	0.015	0.055	ND	0.053	0.013	0.029	0.128	
SC-8	10/22/92	QE	Comp	24,800	ND	0.042	1.870	ND	1.708	0.026	ND	0.135	ND	0.104	0.043	0.142	0.231	
S1-S-1	10/22/92	QE	Grab	75,100	ND	ND	1.870	ND	NE	ND	1.100	0.840	ND	1.850	ND	1.420	2.190	
S1-S-2	10/22/92	QE	Grab	41,500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CS1-0.3	10/22/92	QE	Grab	1,140,000	10,900	5,870	ND	ND	ND	2,070	ND	7,320	ND	7,680	ND	7,630	17,700	
CS1-0.5	10/22/92	QE	Grab	1,370,000	NE	4,090	ND	ND	ND	ND	ND	2,950	ND	4,230	ND	4,540	9,503	
CS2-0.3	10/22/92	QE	Grab	1,790,000	2,200	38,700	ND	1,310	1,840	ND	ND	5,300	74,100	6,690	2,270	162,000	8,193	
CS2-0.5	10/22/92	QE	Grab	1,120,000	3,300	75,900	7,420	78,900	33,600	18,700	4,648	14,600	ND	38,400	ND	5,120	74,500	
CS4-0.5	10/22/92	QE	Grab															2.138
SC3-SS02***	8/20/91	EPA	Grab															0.4868
SC4-SS02***	8/20/91	EPA	Grab															0.5715
MW7-SS01***	8/20/91	EPA	Grab															574.93
PP03SS02	8/20/91	EPA	Grab															
Average				283,845	0.687	2.108	8.299	1.421	0.851	0.763	0.341	3.271	0.809	2.516	0.129	5.772	3.898	N/A
Std. Dev.				781,212	6.262	10,140	2.541	6.241	6.393	5.875	1.345	16.518	12.088	12.980	0.803	28.426	16.008	N/A
Upper 95% CI				536,234	2.384	5.734	1.303	4.745	3.114	2.794	0.881	8.188	3.335	7.301	0.419	16.293	9.628	N/A
Industrial PRG				90.08	1200800.00	1800808.00	0.21	2.10	21.00	2.10	--	210.00	280800.00	420000.00	180.08	--	29808.00	15.000

* Compound not analyzed

** No PRG

***Not located on PI Site and not part of closure Plan

Table 4-2 Subsurface Soil Data Summary

Sample ID Number	Sample Depth (ft)	Sample Date	Sample Collector	Sample Type (grab/comp)	Benzo(b)fluoranthene mg/Kg (tot)	Acenaphthene mg/Kg (tot)	Anthracene mg/Kg (tot)	Benzo(a)pyrene mg/Kg (tot)	Benzo(k)fluoranthene mg/Kg (tot)	Benzo(ghi)perylene mg/Kg (tot)	Benzo(a)anthracene (mg/Kg (tot))	Chrysene (mg/Kg (tot))	Fluorene (mg/Kg (tot))	Fluoranthene (mg/Kg (tot))	Naphthalene (mg/Kg (tot))	Phenanthrene (mg/Kg (tot))	Pyrene (mg/Kg (tot))
TB0408B1	12-17	8/28/01	EPA	GRAB	0.830	ND	ND	*	ND	ND	*	ND	ND	*	ND	ND	ND
TB0410B1	16-19	8/28/01	EPA	GRAB	1.100	ND	ND	0.041	0.130	0.140	0.074	0.570	0.300	ND	0.220	ND	0.260	0.430
TB0508B1	33-37	8/28/01	EPA	GRAB	0.260	ND		*	0.100	0.065	*	0.120	0.190	0.230	*	ND	ND	ND
TB0538B1	78-79	8/28/01	EPA	GRAB	1700.000	11.000	1.200	11.000	1.400	1.300	2.200	11.000	4.600	2.700	1.000	3.100	130.000	21.000
TB0638B1	45-47	8/28/01	EPA	GRAB	ND	ND	ND	*	ND	ND	*	ND	ND	ND	*	ND	ND	ND
TB0618B2	78-78	8/28/01	EPA	GRAB	ND	ND	ND	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB0718B1	36-37	8/28/01	EPA	GRAB	840.000	5.300	7.800	*	ND	ND	*	ND	ND	3.800	*	46.000	8.900	3.200
TB0738B1	78-78.5	8/28/01	EPA	GRAB	1600.000	ND	5.400	NE	2.600	2.100	5.000	NB	4.500	31.000	1.200	20.000	10.000	1.300
TB0858B1	33-37	8/28/01	EPA	GRAB	130.000	3.300	12.000	*	12.000	12.000	*	12.000	12.000	1.800	*	12.000	5.900	12.000
TB0858B2	75-77	8/28/01	EPA	GRAB	110.000	10.000	2.000	NE	ND	ND	1.700	ND	2.000	ND	0.730	ND	1.800	8.400
TB0918B1	33-37	8/28/01	EPA	GRAB	ND	ND	ND	*	ND	ND	*	ND	ND	ND	*	ND	ND	ND
TB0938B2	75-77	8/28/01	EPA	GRAB	ND	ND	ND	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB1018B1	33-37	8/28/01	EPA	GRAB	0.810	ND	ND	*	ND	ND	*	ND	ND	ND	*	ND	ND	ND
TB1058B2	75-77	8/28/01	EPA	GRAB	ND	ND	ND	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB1-0.5	0.5	10/21/02	QE	GRAB	1210.000	11.000	83.000	NB	ND	ND	ND	ND	27.000	1.900	13.300	147.000	8.030
TB2-0.5	0.5	10/21/02	QE	GRAB	804.000	1.800	15.700	NB	ND	ND	ND	ND	13.000	1.110	6.190	76.300	4.030
TB3-0.5	0.5	10/22/02	QE	GRAB	2030.000	11.400	38.500	NB	NB	ND	ND	ND	NE	29.100	1.740	2.000	132.000	5.700
TB1-4	4.0	10/21/02	QE	GRAB	410.000	1.700	3.370	NB	ND	ND	1.230	ND	0.658	2.310	0.709	0.495	11.400	2.430
TB1-8	8.0	10/21/02	QE	GRAB	515.000	3.010	9.980	NB	ND	ND	ND	ND	NE	12.200	0.572	1.000	49.400	2.300
TB1-12	12.0	10/22/02	QE	GRAB	730.000	6.150	11.700	NB	ND	ND	0.905	NB	1.810	33.600	2.330	18.600	80.600	17.000
TB2-4	4.0	10/22/02	QE	GRAB	851.000	7.100	18.000	NB	NB	ND	ND	ND	NE	15.000	0.827	0.849	93.100	4.720
TB2-8	8.0	10/21/02	QE	GRAB	238.000	5.580	2.970	0.811	1.210	1.000	1.500	ND	1.810	1.800	1.760	6.110	20.200	1.160
TB2-12	12.0	10/22/02	QE	GRAB	474.000	3.240	12.700	NB	NB	ND	ND	ND	NE	12.100	0.686	4.920	27.700	3.130
TB3-4	4.0	10/21/02	QE	GRAB	814.000	2.840	1.180	NB	1.230	ND	ND	ND	1.070	1.940	1.280	ND	11.600	4.260
TB3-8	8.0	10/21/02	QE	GRAB	5430.000	440	16.500	NB	NB	ND	ND	NB	0.318	19.000	1.150	7.560	84.600	4.860
TB3-12	12.0	10/22/02	QE	GRAB	1450.000	8.270	21.800	NB	NB	NB	ND	ND	1.020	21.100	2.050	13.800	112.000	7.100
SL1-4	4.0	10/22/02	QE	GRAB	0.154	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SL1-8	8.0	10/22/02	QE	GRAB	1.170	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SL2-4	4.0	10/22/02	QE	GRAB	0.128	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SL2-8	8.0	10/22/02	QE	GRAB	1.470	ND	ND	NB	0.918	0.802	0.917	NB	0.070	ND	0.052	ND	ND	0.878
CS1-4	4.0	10/22/02	QE	GRAB	927.000	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	NB	1.290
CS1-8	8.0	10/22/02	QE	GRAB	1.340	ND	0.015	NB	0.012	ND	ND	ND	0.018	ND	ND	ND	NB	0.021
CS2-4	4.0	10/22/02	QE	GRAB	67.000	ND	ND	NB	ND	ND	ND	ND	0.631	ND	ND	ND	NB	0.367
CS2-8	8.0	10/22/02	QE	GRAB	ND	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	NB	ND
CS3-4	4.0	10/22/02	QE	GRAB	973.000	7.810	1.900	NB	0.349	0.709	0.918	NB	1.940	1.560	3.630	3.704	9.980	4.260
CS3-8	8.0	10/22/02	QE	GRAB	299.000	0.455	0.234	NB	NB	ND	ND	NB	0.423	0.418	0.470	ND	3.810	0.896
CS4-4	4.0	10/22/02	QE	GRAB	18.100	ND	ND	NB	0.211	0.318	ND	ND	0.653	ND	0.462	ND	NB	1.040
CS4-8	8.0	10/22/02	QE	GRAB	ND	ND	ND	NB	ND	ND	ND	ND	ND	ND	ND	ND	NB	ND
Average					440.64	3.07	3.34	0.39	0.31	0.47	0.38	0.41	2.88	5.98	1.30	3.81	28.08	3.21
Std. Dev.					582.12	3.26	3.81	6.08	3.49	3.82	0.86	6.60	2.58	9.36	1.37	10.30	38.23	6.72
Upper 95% CL					628.71	4.11	4.87	2.19	1.42	1.68	0.71	2.71	1.80	8.01	1.99	7.27	42.04	4.73
Proposed PRG					90.00	120000.00	1000000.00	0.21	2.10	21.00	2.10	**	1103.00	26909.00	27990.00	190.00	**	29900.00

* Compound not analyzed
** No PRG

4.2. Groundwater Characterization

The START2 assessment and the QE assessments have identified groundwater contamination is excess of the Region IX groundwater standards in wells downgradient of the treatment facility. Wells MW1, MW2, MW3 and MW4 have all shown PCP or PAH compounds at least once based on groundwater monitoring during or after monitoring well installation. MW1, MW2, MW3 and MW4 showed groundwater contamination in excess of the Region IX groundwater standard at the time of drilling. Since the well installation, only MW2 and MW3 have shown PCP in excess of the groundwater standards. MW4 has shown PAH compounds at one time since well installation, with all COC identified at levels below the groundwater standards. Table 4-3 provides a groundwater data summary for PCP and PAH sampling performed at the site. Table 4-4 provides a groundwater data summary for dioxin sampling performed at the site.

Upgradient wells, MW5 and MW6, have not shown any impact from the treatment facility. A summary of the groundwater sampling conducted to date is shown in the Table 4-3.

Groundwater and soil contamination are present beneath former dip tank area. This contamination is the result of a leak in the tank caused by a broken weld in the tank bottom. Contamination has migrated through the soil column beneath the dip tank to the water table. Being lighter than water, the PCP/fuel oil mixture has migrated on the water table downgradient of the dip tank facility. The seasonal fluctuation in the level of groundwater has created a smear zone in the soil column. The concentration of contaminants in groundwater varies depending on the amount of contaminated soil in contact with groundwater. The extent of the migration is as demonstrated by the monitoring results of the six monitoring wells.

Table 4-3 PCP and PAH Summary of Groundwater Data

Well ID	Sample Date	Pentachlorophenol (µg/L)	Acenaphthene (µg/L)	Anthracene (µg/L)	Benz(a)anthracene (µg/L)	Benzo(a)fluoranthene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Fluorene (µg/L)	Fluoranthene (µg/L)
MW1	8/23/01	1,100,000	ND	*	*	*	*	*	*	*	ND	ND
	1/15/02	ND	*	*	*	*	*	*	*	*	*	*
	11/14/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/27/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	9/29/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	8/20/01	260,000	ND	*	*	*	*	*	*	*	ND	ND
	1/16/02	ND	*	*	*	*	*	*	*	*	*	*
	11/14/02	3,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/27/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	9/29/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	8/20/01	41,000	ND	*	*	*	*	*	*	*	ND	ND
	1/16/02	4,430	*	*	*	*	*	*	*	*	*	*
	11/14/02	5,420	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/27/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	9/29/03	9,880	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW4	11/14/02	86,600	0.260	ND	ND	ND	ND	ND	ND	ND	0.240	ND
	3/27/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	9/29/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW5	9/29/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW6	9/29/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tap Water PRG		0.560	370.000	1800.000	0.009	0.009	0.092	0.009	**	9.200	240.000	1500.000

Shaded Cell Indicates Value in Excess of PRG
* Constituent was Analyzed
** No PRG for This Constituent

Table 4-4 Dioxin Sampling Summary Table-March 27, 2003

PCDD/PCDF	WHO TEF	MW2		MW3		MW4	
		pg/L	TEQ	pg/L	TEQ	pg/L	TEQ
2,3,7,8-TCDD	1						
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1			20	20		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1			68.8	6.88		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	23.10	2.31	1080	108		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1			209	20.9		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	1130.00	11.30	42700	427	275	2.75
1,2,3,4,6,7,8,9-Octochlorodibenzo-p-dioxin	0.0001	12500.00	1.25	285000	28.5	2180	0.218
2,3,7,8-Tetrachlorodibenzofuran	0.1						
1,2,3,7,8-Pentachlorodibenzofuran	0.05			10.5	0.525		
2,3,4,7,8-Pentachlorodibenzofuran	0.5			12.8	6.4		
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	7.09	0.71	85.7	8.57		
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	20.30	2.03	104	10.4		
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	4.84	0.48	74.8	7.48		
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1			16.4	1.64		
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	205.00	2.05	2360	23.6	4.61	0.0461
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	11.90	0.12	108	1.08		
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.0001	1130.00	0.11	9210	0.921	15.8	0.00158
2,3,7,8-tetrachlorodibenzo-p-dioxin TEQ			20.37		671.896		3.01568
MCL (pg/L) 30.0							